**Partnership of Clinical Microbiology Laboratories and Public Health Laboratories in Management of Emerging Infections**

**Faculty:**

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**Objectives:**

- Recognize the role of the public health laboratory in the diagnosis of infectious diseases.
- Discuss how collaboration between clinical laboratories and public health laboratories benefit the patient.
- Explain the laboratory methods utilized in the public health laboratory.

The threat of emerging infectious disease requires that the public health laboratories and the clinical laboratory provide a continuum of quality laboratory services. These laboratories are in a mutually dependent relationship. The clinical laboratory serves on the front line of defense in rapidly recognizing and preventing the spread of infectious diseases. The public health laboratory provides specialized tests of low-incidence and high-risk diseases. To better understand the core functions and capabilities of the public health laboratory, areas of laboratory testing where the clinical laboratory and the public health laboratory cooperate to prevent the spread of emerging agents will be reviewed.

Five important areas of mutual cooperation are:

- Emerging food-borne pathogen strain typing using pulsed field gel electrophoresis
- Influenza virus strain typing
- Preventing the spread of antibiotic resistant strains
- Recognizing the spread of West Nile Virus
- Confirming the identification of Bioterrorism agents

There are many examples of successful cooperation which has prevented the spread of emerging agents. The enteric pathogen is first isolated in the clinical laboratory, next referred to the public health laboratory for strain typing, and is then reviewed by epidemiologists searching for like strains throughout the country. Isolates of Influenza virus are strain typed to determine incidence and that information is used to predict the necessary vaccine for the following year. Rapid diagnostic testing, such as real time-PCR, is now available in the public health laboratory to rapidly identify emerging agents such as West Nile Virus or confirm the identification of an agent of bioterrorism. In this presentation, the laboratory methods utilized to achieve these results will be

reviewed.

The participants will acquire information regarding advanced diagnostic testing abilities in the public health laboratory that the clinical laboratory can access for rapid diagnosis. By increasing coordination and communication between the clinical laboratory and public health laboratory, patients benefit from rapid diagnostic abilities and increased surveillance.

Intended Audience: Pathologists, Residents, Laboratory Managers, Bench Supervisors, Medical Technologists, Medical Laboratory Technicians, Students

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